INDEX

ADAPTATION, catalase and oxidative processes in animal tissues as possible factors in, 115.
——, fresh-water ciliates to sea water, 273.
Ammonia, determination in water and air, method for, 126.
ANDREWS, E. A. Shell repair by the snail Pleurodonte rostrata Pfr., 294.
Arbacia punctulata, relation between position of female pronucleus and polar bodies in unfertilized egg, 220.
Astasia dangeardi Lemm. compared with Distigma proteus Ehrenberg, in structure and division, 145.
Autotomy in Porcellana platycheles (Pennant), 494.

BARTH, L. G. The chemical nature of the amphibian organizer. I., 244.
Behavior, modification of, in Nereis virens, 356.
Binary fission in four species of common free-living ciliates, 201.
BOND, R. M. Digestive enzymes of the pelagic copepod, Calanus finmarchicus, 461.
BRAARUD, TRYGVE. A note on the phytoplankton of the Gulf of Maine in the summer of 1933, 76.
BROWN, FRANK A., JR. *See* Copeland and Brown, 356.
——, —— —, —. The chemical nature of the pigments and the transformations responsible for color changes in Palaemonetes, 365.

CALANUS finmarchicus, digestive enzymes of, 461.
CALKINS, GARY N. Factors controlling longevity in protozoan protoplasm, 410.
Carbon, organic, dissolved, determination in sea water, 132.
Catalase and oxidative processes in animal tissues as possible factors in adaptation, 115.
Cell division, rate of, as affected by dilute ethyl alcohol, 163.
Cell respiration, effect of radiation on, 259.
Cephalin fraction of mammalian brain as inducing agent in organization, 244.
CHESLEY, LEON C. The effect of radiation upon cell respiration, 259.
Chromatin, macronuclear, and binary fission in four species of free-living ciliates, 201.
Cilia, movement and regulation of, in parapodia of Nephthys bucera, Ehlers, 399.
Ciliates, binary fission in four species, 201.
CLARKE, GEORGE L. Further observations on the diurnal migration of copepods in the Gulf of Maine, 432.
——, —— —. The diurnal migration of copepods in St. George's Harbor, Bermuda, 456.
——, —— —, and R. H. OSTER. The penetration of the blue and red components of daylight into Atlantic coastal waters and its relation to phytoplankton metabolism, 59.
Cleavage, determinative, in harpactid copepod Tisbe furcata (Baird), 335.
Color changes, transformations responsible for, in shrimps, 365.
COONFIELD, B. R. The movement and regulation of cilia on the parapodia of Nephthys bucera, Ehlers, 399.
COPELAND, MANTON, and FRANK A. BROWN, JR. Modification of behavior in Nereis virens, 356.
Copepods, diurnal migration, factors controlling, in Gulf of Maine, 432.
——, —— ——, in St. George's Harbor, Bermuda, 456.
Crustacean eye-stalk extract, growth-promoting action, 250.

DEE, J. E. *See* Goodrich, Dee, Flynn, and Mercer, 83.
Digestion, enzymes of, in pelagic copepod, Calanus finmarchicus, 461.
DILLER, WILLIAM F. *See* Kidder and Diller, 201.
Distigma proteus Ehrenberg compared with Astasia dangeardi Lemm. in structure and division, 145.
DUGGAR, B. M. *See* Livingston and Duggar, 504.
DUNIHUE, F. W. Histolysis and regeneration of anuran tail skin, 381.

EGG-LAYING activities of sea hare, Tethys californicus (Cooper), 300.
Egg, unfertilized, of Arbacia punctulata, relation between position of female pronucleus and polar bodies, 220.
Enzymes, digestive, of pelagic copepod, Calanus finmarchicus, 461.
Epilabidocera amphitrites McMurrich, 466.
Erythrophores, of Scorpaena ustulata, 45.
Ethyl alcohol, effect on rate of cell division, 163.
Exogastrulation in sea urchin, 172.

FERTILIZATION, in Sabellaria vulgaris, 97.
FLYNN, C. M. *See* Goodrich, Dee, Flynn, and Mercer, 83.

GERM cells and sex differentiation in Lebistes reticulatus, 83.
GOODRICH, H. B., J. E. DEE, C. M. FLYNN, and ROWENA M. MERCER. Germ cells and sex differentiation in Lebistes reticulatus, 83.
GRAVE, BENJAMIN H. Further studies on the longevity and swimming ability of spermatozoa, 513.
Growth-promoting action of crustacean eye-stalk extract, 250.
Gulf of Maine, phytoplankton, summer of 1933, 76.

HABROBRACON, impaternate females in, 277.
Hearts, accessory, in oyster, 346.
HETHERINGTON, ALFORD. The sterilization of Protozoa, 315.
Histolysis of anuran tail skin, 381.
HOADLEY, LEIGH. Autotomy in the anomuran, Porcellana platycheles (Pennant), 494.
——, ——. Pulsations in the Nereis egg, 484.
——, ——. The relation between the position of the female pronucleus and the polar bodies in the unfertilized egg of Arbacia punctulata, 220.
HOLT, VESTA. Further observations on the polarity of the eggs of Urechis caupo, 341.
HOPKINS, HOYT S. Accessory hearts in the oyster, Ostrea gigas, 346.
——, —— —. Catalase and oxidative processes in animal tissues as possible factors in adaptation, 115.
Hydra, reunition of pieces, 223.

IMPATERNATE females in Habrobracon, 277.

JOHNSON, MARTIN W. The developmental stages of the copepod Epilabidocera amphitrites McMurrich, 466.
——, —— —. The life history of the copepod Tortanus discaudatus (Thompson and Scott), 182.

KEYS, ANCEL. *See* Krogh and Keys, 132.
KIDDER, GEORGE W., and WILLIAM F. DILLER. Observations on the binary fission of four species of common free-living ciliates, with special reference to the macronuclear chromatin, 201.
KROGH, AUGUST. A method for the determination of ammonia in water and air, 126.
——, ——, and ANCEL KEYS. Methods for the determination of dissolved organic carbon and nitrogen in sea water, 132.
KROPP, B. *See* Navez and Kropp, 250.

LACKEY, JAMES B. Studies in the life histories of Euglenida. IV., 145.
Lebistes reticulatus, germ cells and sex differentiation in, 83.
Light, red and blue components, penetration into Atlantic coastal waters, 59.

LIVINGSTON, L. G., and B. M. DUGGAR. Experimental procedures in a study of the location and concentration within the host cell of the virus of tobacco mosaic, 504.
Longevity and swimming ability of spermatozoa, 513.
——, factors controlling, in protozoan protoplasm, 410.

MACGINITIE, G. E. The egg-laying activities of the sea-hare, Tethys californicus (Cooper), 300.
Marine biological laboratory, thirty-sixth report, 1.
—— —— ——, program and abstracts scientific papers, 322.
MERCER, ROWENA. *See* Goodrich, Dee, Flynn, and Mercer, 83.
Metabolism, of phytoplankton, as affected by penetration of red and blue components of daylight into Atlantic coastal waters, 59.
Migration, diurnal, of copepods in Gulf of Maine, factors controlling, 432.
——, ——, — —— in St. George's Harbor, Bermuda, 456.

NAVEZ, A. E., and B. KROPP. The growth-promoting action of crustacean eye-stalk extract, 250.
Nephthys bucera, Ehlers, movement and regulation of cilia on parapodia, 399.
Nereis egg, pulsations in, 484.
Nereis virens, modification of behavior, 356.
NIGRELLI, R. F. *See* Stunkard and Nigrelli, 534.
Nitrogen, dissolved, method for determination of, in sea water, 132.

ORGANIZER, amphibian, chemical nature, 244.
OSTER, R. H. *See* Clarke and Oster, 59.
Oxidation in animal tissues as possible factor in adaptation, 115.
Oyster, accessory hearts in, 346.

PALAEMONETES, chemical nature of pigments and transformations responsible for color changes, 365.
PAPENFUSS, EMMA JOHNSTONE. Reunition of pieces in Hydra, with special reference to the rôle of the three layers and to the fate of differentiated parts, 223.
Phytoplankton metabolism, as affected by penetration of blue and red components of daylight into Atlantic coastal waters, 59.
——, of Gulf of Maine, summer of 1933, 76.
Pigments, chemical nature, in shrimps, 365.
Pleurodonte rostrata Pfr., shell repair, 294.
Polar bodies, and female pronucleus, relation between positions of, in unfertilized egg of Arbacia punctulata, 220.
Polarity in eggs of Urechis caupo, 341.
Porcellana platycheles (Pennant), autotomy in, 494.
Program and abstracts scientific papers presented at Marine Biological Laboratory, 322.
Prematuration in Sabellaria vulgaris, 97.
Protoplasm, protozoan, factors controlling longevity, 410.
Protozoa, sterilization of, 315.
Pulsations in the Nereis egg, 484.

RADIATION, effect on cell respiration, 259.
——, effect on reconstitution of Stenostomum tenuicauda and some other worms, 304.
Regeneration of anuran tail skin, 381.
Repair, of shell, in the snail, 294.
Reproduction in Sabellaria vulgaris, 97.
Respiration, effect of radiation, in cell, 259.

SABELLARIA vulgaris, reproduction, prematuration, and fertilization, 97.
SCHRADER, FRANZ. On the reality of spindle fibers, 519.
Scorpaena ustulata, erythrophores, 45.
Sea hare, egg-laying activities, 300.
Sea urchin, exogastrulation in, 172.
Sea water, adaptation fresh-water ciliates to, 273.
—— ——, methods for determination of dissolved organic carbon and nitrogen in, 132.
Sex differentiation and germ cells in Lebistes reticulatus, 83.
Shell repair, in snail, 294.
Shrimps, chemical nature of pigments, color changes, 365.

SMITH, DIETRICH C., and MARGARET T. SMITH. Observations on the erythrophores of Scorpaena ustulata, 45.
SPEICHER, KATHRYN GILMORE. Impaternate females in Habrobracon, 277.
Spermatozoa, longevity and swimming ability, 513.
Spindle fibers, reality of, 519.
Stenostomum tenuicauda and some other worms, effects of X-radiation on reconstitution of, 304.
Sterilization, of Protozoa, 315.
STUNKARD, H. W., and R. F. NIGRELLI. Observations on the genus, Sterrhurus Looss, with a description of Sterrhurus branchialis sp. nov. (Trematoda, Hemiuridae), 534.
Swimming ability, and longevity, in spermatozoa, 513.

TETHYS californicus, egg-laying activities, 300.
Tisbe furcata (Baird), determinative cleavage and yolk formation, 335.
Tobacco mosaic, location and concentration of virus in host cell, 504.
Tortanus discaudatus (Thompson and Scott), life history of, 182.

URECHIS caupo, polarity in eggs of, 341.

VAN CLEAVE, C. D. The effects of X-radiation on the reconstitution of Stenostomum tenuicauda and some other worms, 304.

WATERMAN, A. J. Further studies of exogastrulation in the sea urchin, 172.
——, —. Observations on reproduction, prematuration, and fertilization in Sabellaria vulgaris, 97.
WHITAKER, D. M. The effect of very dilute ethyl alcohol upon the rate of cell division, 163.
WITSCHI, EMIL. On determinative cleavage and yolk formation in the harpactid copepod Tisbe furcata (Baird), 335.

YOCOM, HARRY B. Observations on the experimental adaptation of certain fresh-water ciliates to sea water, 273.
Yolk formation in harpactid copepod Tisbe furcata (Baird), 335.